Owner's Manual

IFB100

2.4 GHz Interruptible Feedback, Time Code, and Remote Control Transmitter

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Revision History

- 100.003, January 2008 - Updated to include current firmware settings.
- 100.004, May 2008 - Removed sections to reflect current hardware and firmware.

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Chapter 1

Introduction

The Zaxcom IFB100 is a 100 mW RF transmitter designed to be used with the Zaxcom TRX900 series wireless microphones. The IFB100 uses a spread spectrum signal to send and receive IFB audio, timecode, and remote control signals. By using spread spectrum techniques, the IFB is immune to interference.

In locations where multiple IFB100 units are used, you can set the Zaxcom TRX900 to a specific IFB100 unit.

What's in the Box

The Zaxcom IFB100 contains the following items:

- ❏ IFB100 Transmitter
- ❏ Antenna
- ❏ Power Connector
- ❏ Manual on CD-ROM

Options

Zaxcom offers the following options:

Antennas

- ❏ 2.4 GHz 6 dB gain omni-directional
  This antenna is recommended for indoor or studio use where it can placed in the center of the studio.
- ❏ 2.4 GHz 15 dB gain directional
  This antenna is recommended when placed against a wall, or when a directional transmission is desired.
- ❏ 10 foot cable (~3 m) from IFB100 to 2.4 GHz antenna

Cable Selection

When selecting a cable to use between the IFB100 and the antenna, it should be as short as possible since the IFB100 is using a 2.4 GHz signal. When using standard cabling, the recommended length should not exceed 10 feet. However, a very low loss cable can be used if a cable longer than 10 feet is needed.

Permanent Installations

When permanently installing cables, use 1/2-in. Andrew heliax. Using heliax cabling, a run of 100 feet (~ 30.5 metres) can be achieved without significant power loss.

Getting to Know Your IFB100

The IFB100 contains a simple menu driven interface with minimal physical buttons and connectors.

Front View

1. Increment/Decrement buttons
2. Menu button

Side View

1. DC Voltage Input (+8 to +18 VDC)
2. Timecode Input Connector
3. Audio/Timecode Output Connector
4. Output Level Adjustment for Audio/ Timecode Output Connector
5. Audio Input Connector
6. Antenna Connector - SMA Connector

Top View

1. SD Slot used for updating Firmware in the IFB100.

Setting Up the IFB100

The IFB100 uses a series of menus to configure the unit. The following sections describe setting up the IFB100 for the first time.

Power Requirements

The IFB100 requires an external 8 to 18 VDC power source. Ideally, the source should be 12 VDC, which draws 125 mA current from a 12 VDC source. You need a power supply capable of supplying at least 1 amp to operate the IFB100.

Audio Input

The two channel balanced audio input on the IFB100 uses a TA5 connector. The input audio range is -8 dBu to +4 dBu. You can configure the IFB100 to transmit a single channel or a mix of the two input channels.

Adjusting the Input Audio Level

The input audio is preset by Zaxcom at +4 dBu. However, this level can be adjusted. The following sections describe how to adjust the input audio level depending on which model IFB100 you own.

Early units

- ❏ Remove the rear cover on the IFB100
- ❏ Adjust the input adjustment potentiometer located on the audio input connector board. There is an adjustment potentiometer for each input channel shown below.

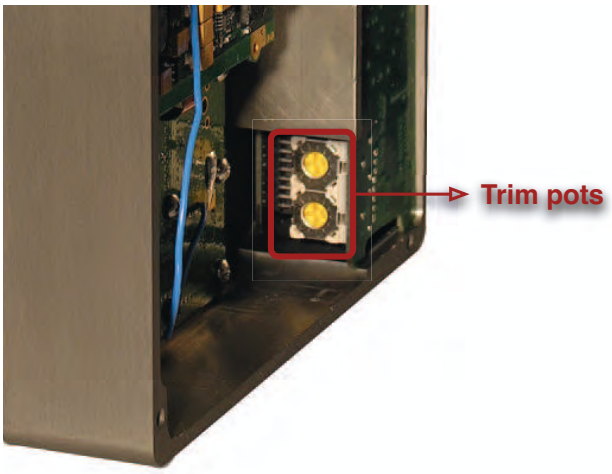


Figure 1 IFB100 Trim Pot Location (Early Units)

Currently Shipping Units

Currently shipping IFB100 units have the trim pots located on the outside of the unit. These are shown in Figure 2.

Figure 2 IFB100 Trim Pot Location (Current Units)

Time Code

Unless an external time code source is present, the IFB100 runs free time code. When connected to an external time code source, the time code syncs with the external source.

Important: A stereo plug is required for external time code sync. The ring on the plug should be unconnected.

You cannot use a mono plug.

Chapter 2

Configuration Menus

The Zaxcom IFB100 uses a series of menus for configuration. These menus are similar to other Zaxcom wireless devices and behave the same way. To go from menu to menu, press the Menu button until the appropriate menu appears.

There are two different sets of configuration menus. More commonly used features are placed in the standard menu, features that do not have to be changed often are placed in the extended menu.

Summary of Configuration Menus

The following table lists all items available in the standard and extended menus.

Standard menu features		Extended menu features	
Main Status Menu	page 5	High Pass Cutoff	page 9
Remote Gain	page 6	Limiter	page 9
Remote Control	page 6	Power Up Mode	page 9
Remote Power Mode	page 6	Timecode Jam Mode	page 10
Timecode	page 7	Timecode Source	page 10
IFB Frequency	page 7	Remote Control Group Code	page 10
IFB Input	page 8	Remote Control Unit Code	page 11
Lock	page 8		

Main Menu

When you power on the IFB100, the main menu appears. This menu displays the following information:

- ❏ Transmitter frequency
- ❏ DC power indicator
- ❏ Audio level meter
- ❏ Status of the IFB100 transport remote control.

Starting and Stopping Recording

When in the main menu, pressing the increment or decrement keys generates a record or stop command to all TRX900 units in the same group as the IFB100.

When setting the audio level, it should peak at -20 dB level.

TRX Transmitter Gain

The gain control function allows you to adjust the gain on the TRX900 series transmitters.

❏ **Transmitter Gain Range**: 0 to 38 dB

Setting the Transmitter Gain

1. Set the Unit code on the IFB100 to match that of the TRX900 unit.
2. Press the menu button until *Gain* appears on the LCD.
3. Press the increment or decrement button to change the gain.

Note: *If the TRX900 is not in range of the IFB or is on the fringe of coverage the gain control command may have to be repeated.*

Monitor the reception of the TRX900 unit being adjusted to verify the change to the gain setting. Each time the gain setting is changed, the TRX900 changes its gain by 2 dB.

Remote Control

The Remote Control setting sets the group you control when you use any of the remote settings.

❏ **Remote Control Range**: All, or 0 to 200

You can set this to all or any of the unit numbers.

Setting the Remote Control Group

1. Press the menu button until *Remote Control* appears.
2. Press increment or decrement button to select the remote group's ID code.

Remote Power Mode

The Remote Power Mode sets power mode each remote transmitter is set to.

❏ **Remote Power Mode:** On, Low1, Low2

On - Turns on all remote units.

Low1 - disables the RF Power Amplifier in remote units.

Low2 - disables the RF Power Amplifier and RF Board. In most cases you want to use Low2 if you are using the remote power mode. When using the low2 mode, the TRX900 draws half the current as the full power mode, saving you battery life.

Setting the Remote Power Mode

1. Set the Unit code on the IFB100 to match that of the TRX900 unit.
2. Press the menu button until *Remote Powermode* appears.
3. Press increment or decrement button to enable (Low1 or Low2) or disable the power mode (on).

To verify the standby mode, monitor the reception of the TRX900 units. All TRX900 transmitters with the same group code will be affected by the power command.

Time code menu

The time code generator on the IFB100 is in the free run mode unless it is connected to a time code source.

Time Code Options: 23.98, 24, 25, 29.97 Non-Drop Frame (NDF), 29.97 Drop Frame (DF), 30 NDF, 30 DF

Setting the IFB Time Code

1. Press the menu button until the Time Code generator menu appears.
   The current generator time is displayed.
2. Press increment or decrement button to change the time code rate to the appropriate frame rate.

If connected, the time code is in sync with the external code feeding the IFB100. If a TRX900 unit is in the autoload mode, it goes into the record/stop mode when the time code is received by the IFB100.

IFB Frequency Selection

The IFB frequency menu is indicated on the LCD screen of the IFB100 by *IFB FREQ*.

❏ **Frequency Range**: 2.403 GHz to 2.475 GHz

The IFB100 can be adjusted in 1 MHz steps within the frequency range (2.4 GHz - 2.47 GHz) with a minimum separation of 2 MHz between channels. However, it is recommended to use 8 MHz of channel separation. This separation is recommended because of the Zaxcom TRX900 voting system.

If the TRX900 voting system is used, you need to use four adjacent 2 MHz channels to operate. For example with the voting system, you would use 2.403 GHz, 2.405 GHz, 2.407 GHz, and 2.409 GHz. This makes 2.411 GHz the next available free channel.

Using 2 MHz spacing the IFB100 support 36 IFB channels simultaneously.

To select the frequency

❏ Press the Menu button until the *IFB FREQ* menu appears.

If interference is encountered, the range of the system is affected. If the range is less than 150 ft., go to a different channel at least 30 MHz away from the interfered channel.

There are many devices that use the 2.4 GHz band. The IFB100 should be able to operate interference free while other devices share the band. It is suggested that when operating in a new location that a range test be conducted before the unit is used for a production.

IFB Input Mix

The IFB100 is a mono transmitter which can be changed to provide Left, Right, or a mono mix of both channels.

❏ **IFB Input Mix Options**: LR Mono Mix, Left only, Right only

Setting the IFB Input Mix

1. Press the menu button until *Input Mix* appears.
2. Press increment or decrement button to change the input mix.

Audio can be selected from a mix of the two input channels, or the left and right channels can be selected independently.

Lock Menu

The IFB100 unit can be locked, so the keys on it cannot accidently be pressed.

❏ **IFB Lock Options**: Locked/Unlocked

Setting the IFB Lock Mode

1. Press the menu button until the Lock menu appears.
   The IFB100 starts counting down from 5 seconds.
2. Wait 5 seconds.
   At the end of 5 seconds, the IFB100 enters the lock mode.

Once locked, the IFB100 will not respond to any normal keypad operations.

Unlocking the IFB100

To resume normal key operations, you must unlock the unit.

1. Press the Menu button and increment key simultaneously.
   This resumes normal operations.

Extended Menu Items

The IFB100 contains several items which normally do not have be changed on a regular basis. These items are placed into the Extended Menu area of the IFB100. The Extended Menu is only accessible by holding menu button down while powering on the IFB100. You cannot access this menu from the normal menu selections.

High Pass Filter

A High Pass Filter for the IFB audio is available in the IFB100.

High Pass Filter: Off, 30 Hz to 220 Hz in 10 Hz increments

Setting the High Pass Filter

1. Hold the menu button and power on the IFB100.
   The IFB100 LCD screen displays *Extended Menu*.
2. Press the menu button until the *High Pass* menu appears.
3. Press the increment or decrement button to change the High Pass settings.

Limiter

A limiter for the IFB audio is available in the IFB100. There are no adjustments for the limiter.

❏ **Limiter**: Off, On

Enabling the Limiter

1. Hold the menu button and power on the IFB100.
   The IFB100 LCD screen displays *Extended Menu*.
2. Press the menu button until the *Limiter* menu appears.
3. Press the increment or decrement button to enable or disable the audio Limiter.

Power Up Mode

The factory default for the IFB100 places it in an unlocked mode where all keys work. Using the Power Up mode toggle, the IFB can be locked.

❏ **Power Up Mode:** Unlocked, Locked

Toggling the Power Up Mode

1. Hold the menu button and power on the IFB100.
   The IFB100 LCD screen displays *Extended Menu*.
2. Press the menu button until the *Power Up* menu appears.
3. Press the increment or decrement button to change the power up lock mode of the IFB100.

Unlocking the IFB100

To resume normal key operations, when the unit is locked, you must unlock the unit.

1. Press the Menu Button and increment key simultaneously.
   This resumes normal operations.

Time Code Jam Mode and Auto Load

When enabled, there are two time code modes available.

- ❏ TC Jam Mode: Auto Jam, Auto Load
- ❏ The other non-time code mode is Manual (off)

About Auto Jam

Auto Jam, jams time code to the IFB100 and TRX900 unit continuously.

About Auto Load

Auto Load starts and stops the TRX900 recording when the time code connected to the IFB100 starts and stops.

Setting the Time Code Jam Mode

1. Hold the menu button and power on the IFB100.
   The IFB100 LCD screen displays *Extended Menu*.
2. Press the menu button until the *TC Jam Mode* appears.
3. Press the increment or decrement button to change the time code jam mode.

Time Code Source

The IFB100 can receive time code through one of two connectors on the unit.

- ❏ TC Source: Side Connector, Audio Input

Setting the Time Code Source

1. Hold the menu button and power on the IFB100.
   The IFB100 LCD screen displays *Extended Menu*.
2. Press the menu button until the *TC Source* appears.
3. Press the increment or decrement button to change the time code jam mode.

Remote Control Group Code

To use the remote control function a unique group code must be selected. If the group code is not selected the IFB100 remote control is not enabled.

- ❏ **Group Code Range**: 0 to 99

Setting the Group Code

The group code selection menu is in the extended menu. This menu is only accessible by holding menu button down while powering on the IFB100. You cannot access this menu from the normal menu selections.

To Access the Group Code

1. Hold the menu button and power on the IFB100.
   The IFB100 LCD screen displays *Extended Menu*.
2. Press the menu button until the *Group select* appears.
3. Press the increment or decrement button to change the group code.

When setting the group code, you need to select a unique code. This is very important when multiple wireless devices are in the same area, since any device on the same group code as you can affect your TRX900 unit. To avoid this, coordinate with others in the area and ensure everybody is on a separate group code.

Once the group code is set, multiple TRX900 units can be controlled remotely.

Remote Control Unit Code

The Unit code allows you to set a unique identifier for a single TRX900 unit, and remotely control the unit.

- **Unit Code Range**: 0 to 200

Setting the Unit Code

1. Press the menu button until *Unit* appears on the LCD.
2. Press the increment or decrement button to change the unit code.

Once the code is set, the functions of an individual transmitter can be changed remotely.

Chapter 3

IFB100 Specifications and Wiring Diagrams

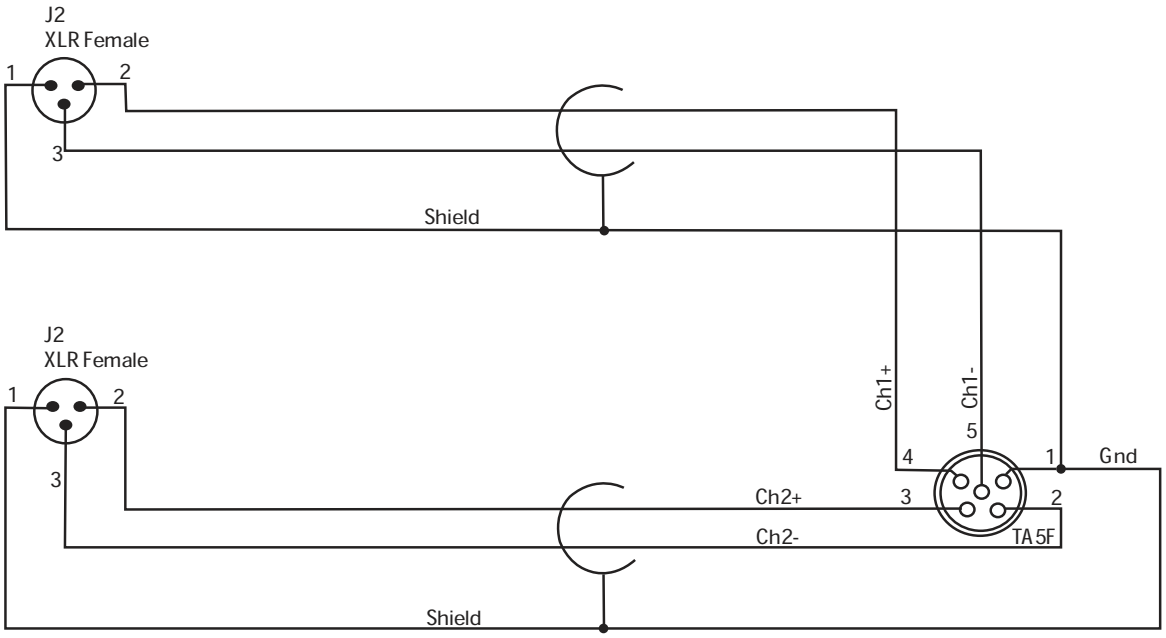
This chapter contains the IFB100 specifications and wiring diagrams.

Specifications

TXRF Power:	100 mW
RF Connector:	SMA female
Power consumption:	150 mA @ 12 VDC (L712 jack)
Voltage Range:	+8 to +18 VDC
Modulation:	Spread spectrum
Size:	3.1 x 3.7. x .9-in (787 x 940 x 228 mm)
Weight:	6 oz. (170 g)
Audio Input	
Type:	balanced
Level:	-10 to +8 dBu
Impedance:	10 kΩ
Dynamic range:	103 dB
Connector:	TA5 male
Time Code Input	
Connector:	Mono 1/8-in. (3.5 mm)
Impedance:	10 kΩ
Minimum level:	1 VP/P

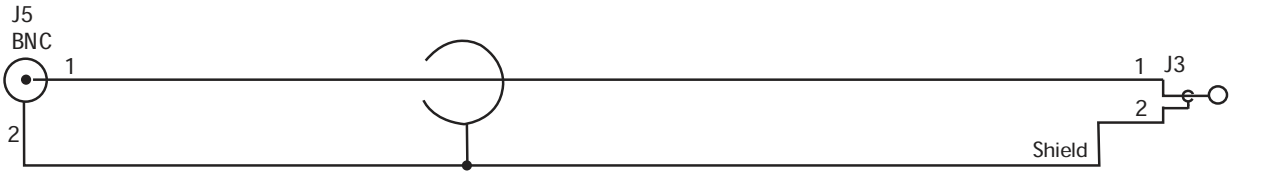
Wiring Diagrams

IFB100 to XLR Female - Line Level In



Length - 2 Feet
Use a thin cable to fit into the TA5F

IFB100 Time code input from Male BNC to 3.5mm Male



Use RG174 or similar coax
Length - 2 Feeth

Note: Stereo plug only
ring is not connected